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Shingle and the Willow oaks, producing thereby varieties that are recognizable and have in consequence been named. *Quercus ilicifolia* is likewise known to be one of the parents of a hybrid form. The cross between *nigra* and *ilicifolia*, however, is not mentioned, and as it is also a recognizable form I wish to propose for it the name of *Quercus Brittoni*, after Dr. N. L. Britton, who was born on the island, and who, with Mr. Arthur Hollick, has done so much in making known its flora.

II.—A single oak of much interest stands in a thick growth of trees in moist ground not far from the specimens of *Quercus Brittoni* mentioned above. It is sixteen inches in circumference several feet from its base, and once stood about twenty-five feet high, as proved by measurement, though in consequence of a decayed base the trunk is now partly prostrate. A considerable portion of the tree is still clothed in leaves, which are white-downy beneath, and it produces acorns, but neither the fruit nor the foliage is distinguishable from that usually borne by the diminutive *ilicifolia*, which commonly has a trunk no larger round than one of the branches borne by this tree.

Wood says of *Quercus ilicifolia*: "a shrub" three to four feet high; Eaton and Wright give two to eight feet, and Loudon, in his Encyclopædia of Trees and Shrubs, says: "This very remarkable little tree is generally found about three or four feet high; but in favorable situations it is sometimes found to reach the height of eight or ten feet." Lastly, in the recent edition of Gray's Manual it is mentioned as dwarf and straggling, and eight is given as the maximum height.

It will be seen from these facts that this tree has attained over twice the size heretofore accorded the species, which certainly makes it interesting and noteworthy.

Buchloe dactyloides, Englm., not a Diœcious Grass.

The common buffalo grass of the "plains" is well known to botanists. It begins to appear near the ninety-fourth meridian, and extends westward to the Rocky Mountains, northward into the British possessions, and southward to the sands of the Gulf coast. It is a grass of short stature, seldom more than six inches tall, though I have specimens collected in this State more than a foot high. Our species was formerly of great repute among stockmen in the central and northern parts of its range as a winter forage plant. Much of the credit given to it belongs, however, to species of *Bouteloua*, especially to *B. hirsuta* and *B. oligostachya.* It usually neighbors closely with those grasses, which are regarded by many ranchmen as merely forms of it. While doubtless a very nutritious grass, its manner of life adds very much to its value. It has a way of sending its roots down ten or fifteen feet, which, combined with its stoloniferous character and its numerous curling linear leaves, enables the plant to live and thrive under most unfavorable climatic conditions. Naturally almost hay, it readily cures under the dry, hot winds into a valuable fodder for the wild deer and the wild buffalo, as well as for their successors, the hardly less wild steers of the cattlemen. Farther east and south, it largely yields place to more luxuriant grasses.

The history of our subject is interesting from the fact that, for a long time after its discovery, what has hitherto been regarded as its true character, was unknown to botanists. Nearly seventy five years ago, Nuttall discovered the staminate form and named it *Sesleria dactyloides.* In 1855 Steudel named the pistillate form, collected by Drummond, *Antephora axilliflora*—no botanists at that time recognizing the relationship of the two forms. In 1859 the late Dr. George Engelmann, of precious memory to botanists, received what he considered a mere sprout of the plant, a form bearing both staminate and pistillate flowers, but borne on distinct stalks proceeding from different parts of the same rootstock. The practiced eye and judgment of Dr. Engelmann saw at once that *Sesleria dactyloides* and *Antephora axilliflora* were forms of the same plant. Supposing that he had before him a diœcious grass so distinct from all others as to possess generic characters, he founded a new genus and named it *Buchloe*, a contraction of Bubalo, Greek for the Old World buffalo, and chloa, grass.

Great and important facts and principles in science and philosophy often lie around loosely, and cuffed and are kicked about for years, sometimes for centuries, because great men, strongly intent upon another and more remote object, overlook that which is near by and under foot. The sheep-like world follows the leader until a chance observation reveals the proximate fact, and then every one wonders why every one had not seen it before. From my first introduction to buffalo, about twelve years ago, and without personal knowledge of the plant in its original monœcious form, but knowing that such a form existed, I was led to doubt the correctness of Dr. Engelmann's conclusion that it is really a diœcious grass. The presumption of doubt strengthened when I found an individual plant bearing both staminate and pistillate flowers. Further experience confirmed my strong notion into what may be considered to be a fact.

During one of my botanical rambles in Kansas, while walking over soil newly moved by a freshet, I noticed the peculiar appearance of the individual plants of buffalo grass growing upon it. There were scores of them, if not hundreds. All of them appeared to be seedlings, having yet not sent out stolons. All of these plants were monœcious. That seems to be sexually the original character of the species. The fact of the unisexual flowering stems, proceeding from different parts of the plants, with its stoloniferous character generally increasing and spreading in that way, will fully account for its diœcious habit.

The facts of the rapid disappearance of the species with the advent of civilization and agriculture, the paucity of pistillate plants, and that the pistillate form, like the staminate one, is seldom, if ever, found growing singly, can now be easily explained. The staminate stolons are much stronger than the pistillate ones, so that they easily outgrow and overrun the others, becoming sometimes two to five or more feet long. There are probably a thousand individuals of the staminate form to one of the pistillate. The few large seeds are eagerly sought by animals. They are often, too, destroyed by a beetle. Seed-bearing individuals being thus easily destroyed, few seeds remain for reproduction, and much of that which remains only aids in giving the stronger form more chance in the race of life. So when either form is destroyed its destruction is complete.

If carefully conducted experiments in growing plants of buffalo grass from its seed should show that the plants before they send out stolons are always, or generally, diœcious, which cannot be, as these are too monœcious plants, then Dr. Engelmann's theory of the sexual character may be correct. In the absence of such proof, if we are true philosophers, we are obliged to accept the nearest-by theory that explains the phenomena that the life, character and life-work of our plant presents; and pronounce it to be originally, as it comes from the seed, a monœcious grass, bearing unisexual flowers upon stalks arising from different parts increasing itself mainly by stolons proceeding from sexually different parts of the plant, each reproducing its own form.

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The Rhizomes of Penthorum sedoides as Leafy Shoots.

In August, 1891, a *Penthorum sedoides*, L., was taken from the wet sand of a ditch and placed in a glass jar of water in which aquatic plants and animals were kept for study. About three months afterwards it was taken out of the jar to be thrown away, since the leaves had fallen off and the stem was mostly dead, and it was thought to be of no further use. Finding the subterranean stems, which were three or four in number and from two to three inches long, thickly covered with leaves, the plant was replaced in the jar for further development; the shoots had not attracted attention before, as they were in the midst of stems of *Anacharis*, which they resembled closely enough to be overlooked. At the beginning of the past summer most of these leaves had dropped off, but one stem had a living bud and some fresh leaves after more than a year's time had passed. The rhizomes have behaved like an aquatic, floating in the water in which they have been immersed, and receiving plenty of light but no food except what has been furnished by the stem and the water. The leaves are of a deep green color, and are closely imbricated, they are sessile, narrowly oblong-oblanceolate, acute, and finely serrate. They are from three to five eighthsof an inch long, thickish, or inclined to be fleshy. A minute bud is found in the axile of each; they are very much crowded, and are apparently eight-ranked. They call to mind species of *Sedum*, especially *S. acre*, by the imbricated leaves, their small size and general ap-